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HARTFORD (CONN.) WILL NOT TRY THE "ARC" LIGHT.

Some short while ago a proposition was submitted to the local authorities of Hartford, Conn., by the Hartford Electric Light Company, which had for its object the illumination of the city's streets with the "arc" light. The proposal of the electric lighting company was to supply any number of lights that the authorities might deem requisite; such lights to burn from sunset until daylight, and to be charged for at the rate of 65 cents per light per night. The subject matter of the proposal was referred by the Hartford Board of Council to the Board of Street Commissioners, with instructions to report back to the former body as to the desirability and feasibility of entering into such a contract. The Street Commissioners reported that they deemed it inexpedient, at the present time, to go into any extended use of the electric illuminant, owing to the great cost of the same; but suggested that, by way of experiment, a certain number of the lamps be erected in prominent portions of the city. In the opinion of the commissioners, it was adjudged that one electric lamp would take the place of four gas lamps, and concluded their recommendation by saying that, "An actual trial will be the only way of demonstrating the power of the light, and proving its practical value for this particular use."

Appended to the report of the Commissioners was the following resolution:

"*Resolved*, That the Board of Street Commissioners are hereby authorized to establish such numbers of electric lights about City Hall square, on Bushnell park, and in parts of Main, State, Allyn, Trumbull, Pearl, and Asylum streets, as they shall deem expedient, not exceeding, in the whole, 30 lamps."

It was not to be expected that Mr. John P. Harbison (who is a member of the Board of Aldermen) would give a ready concurrence to the passage of this resolution; and he did not. Moreover, he came prepared with figures and statements showing why such a course should not be pursued, if due attention were to be paid to the best interests of the city's treasury. He noted how the proposed electric lights, at the rate of 65 cents per night, for 330 nights (estimating 35 nights out of the 365 as being sufficiently illuminated by the moon) would cost $214.50 per light, as against $138 per light for gas, at last year's rates, in accordance with the statement made by the Street Commissioners that one "arc" light would displace four gas lamps—an annual difference of $2,500 in favor of gas, even for this initial attempt at installing 30 lights in central portions of the city. Another thing that Mr. Harbison could not understand was why the city should be charged 65 cents when the same arc lights were already furnished to business establishments at 40 cents. A probable answer to this objection might be found in the reply that the latter are calculated to burn only until midnight, whereas the cost for the proposed city lamps was based on an all-night service. Mr. Harbison further said that, in the course of his inquiries on the subject, he found Boston (Mass.) was paying but 57 and 58 cents per night for an all-night service, and very pertinently propounded the question, why was it that Hartford was asked to pay 65 cents for an article that was being supplied by the same electric light company in Boston at so much lower figures. Mr. Harbison also warned the Council that the time was close at hand when public opinion would require the enacting of laws making underground electric conduction obligatory upon all those engaged in the supply of electricity for purposes of illumination, arguing that it would be unwise policy to embark in a business, the leading features of which would soon have to be changed. He further cited the fact that the gas company was a Hartford corporation,

managed and controlled by Hartford capital, and had always been willing to do the fair thing by the Hartford authorities, as testified by the numerous voluntary reductions which it had made in the selling price of gas.

When the question, as to the indefinite postponement of the resolutions to enter into the contract recommended by the Street Commissioners, was placed before the Council, the arguments adduced by Mr. Harbison evidently had the effect of convincing the members that this was the wiser course to pursue; and the motion to indefinitely postpone was carried by the requisite majority.

DEATH OF SIR C. WILLIAM SIEMENS, F.R.S.

The death of that eminent scientist, discoverer and inventor, Sir C. William Siemens, is announced as having taken place, on Monday, November 19. The cause of his death, it appears, is attributed to a fall, received through an accidental stumble in one of London's streets, by which an injury to the heart, leading finally to paralysis of that organ, was occasioned. The life of this distinguished man, when traced from the cradle to grave, teaches what strength of character, tenacity of purpose, and brightness of intellect will accomplish. He was born at Lenthe, in Hanover, on April 4, 1823, and, in 1844, went to England for the purpose of introducing a method of gilding and silvering by galvanic deposit. So favorably was he impressed with what he saw there, that he determined to make it his future home, becoming a naturalized subject of Great Britain in 1859. Sir Siemens will be remembered by the greater number of Americans in connection with his success in laying the Direct United States Cable, which cable line was opened to the public for the transmission of messages on September 15, 1875. Of course, to the American gas maker the deceased scientist will be known in relation to the improvements devised by him in the field of their own particular industry. The London *Journal*, in noting the fact of his decease, says:

"It is in respect of his discoveries in connection with the use of gaseous fuel that Sir William Siemens bore the closest affinity with gas engineers. The Siemens regenerative gas burner was not his invention; but was devised by his younger brother, Frederick, who has remained in comparative retirement in Dresden at the head of his great glass factory. Sir William Siemens's own gas burner, exhibited for the first time before The Gas Institute at Birmingham in 1881, was not very successful; and the same may be said of his attempts to construct a hot-cylinder gas engine. It is not within our province to describe the numerous inventions with which the gifted brothers Siemens—William, Werner, and Frederick—have enriched mankind; nor to apportion the credit of them to the respective members of the family, for the special glorification of him whose death we now deplore. Let it be sufficient to acknowledge that the age in which we live, remarkable as it is for men who have penetrated the secrets of nature, and made new openings for human industry, contains no more wonderful story that of the Hanoverian brothers, one of whom became an Englishman, and has just died in the plenitude of riches and renown. Merit like theirs is rare; success such as they achieved is still rarer. The man himself is dead; and we join with all sincerity in deploring the cessation—so premature, as it seems—of that almost ubiquitous energy. But the work that he began will not cease, nor the fame of it die away, so long as the Victorian era forms part of human history."

How the Dublin (Ireland) Gas Works Strikers were Dealt With.

A number of laborers engaged in the manufacturing establishment of the Dublin gas works some time since, not being satisfied with the wages paid them, left work in a body, a petition which had been presented by them to the board of directors, asking for an increase, having been denied. When the Superintendent, Mr. W. Browning, noticed signs of mutiny among the men he pointed out to the malcontents the penalty attached to quitting work without giving to the company a week's notice of such determination. This did not deter them. Their action endangered the stability of the supply of gas to the city, but Mr. Browning managed, by dint of hard work, to prevent such an occurrence. On complaint of Mr. Browning the strikers, to the total of 43, were summoned before Mr. Woodlock, the presiding magistrate of the Dublin Southern Divisional Police Court, on account of "having wilfully and maliciously broken a contract of service with the gas company, knowing that the consequences of their so doing would be to deprive the inhabitants of the city of Dublin wholly or to a great extent of their supply of gas." This offence, under the laws there applicable to such cases, left the offenders liable to a penalty of a fine of £20 each, or three months imprisonment. The trial of one of the offenders, John Dempsey, was made as a test case.

After the testimony had been submitted, and the offender properly identified, Mr. Woodlock decided that the charges had been proven, and sentenced Dempsey to a term of fourteen days imprisonment. At this stage of the proceedings the further consideration of the cases was postponed until the following day, it being understood that an arrangement would be made whereby the serving of the sentence would not be insisted upon. On the next date, Dempsey and his fellow prisoners, were again called up before Mr. Woodlock, who lectured them severely upon their conduct, and informed them that as the complainant would not further press the charges (especially as all the offenders had pleaded guilty) they would be liberated on their own recognizances. We wonder how the "striking voters" that took part in trying to upset the management of the Washington Gas Company, would like this style of treatment?

The Petroleum Outlook.

The statement, advanced, in this journal last month that "the condition of the trade favors the producer," has been fully borne out by subsequent developments, and though the average price of crude oil during October was lower than for September—$1.12½ against $1.18½—the month of November has led to a higher plane of values that promises to be permanent. The advent of a "boom" in prices, can as yet not be recorded, but the past three weeks has witnessed a healthy, steady appreciation that has every appearance of a permanency and that seems justified by the changed conditions in the producing fields.

That these changes are in the direction of higher priced oil, seems manifest. The unreliability of the temporarily rich fields of Forest County, the Cooper Tract and Balltown region, have centralized the attention of producers upon the Bradford field. This has resulted in a marked appreciation in the value of such property, an advance equal to about 90 per cent. within the past five years. Recent transactions establish this fact. The latest sales of oil producing property in the Bradford field have shown an advance from $500 and $600 per barrel of production daily, to $900 per barrel. This has been the natural outgrowth of the rapid depletion, since the first of the present month, of the outside fields already referred to. Their present yield as compared to their September yield is about one third. At the same time, the total yield of all the fields, has fallen from 66,989 in October to barely 60,000, November 22.

Meanwhile, diligent drilling in various directions has failed to develop any territory bearing the semblance of a region which shall make good this shrinkage in the old fields. The theory advanced by eminent geologists—and given in recent issues of this journal—that there is no reliable deposit of oil, adjacent to and outside the already defined limits of the Pennsylvania fields, has so far been fully verified. Evidently, in the light of late developments, the highest point in the yield of the Pennsylvania oil regions has been reached and passed, and legitimate and natural decline must follow.

The figures show that the corrected count of all producing wells in the upper hills is 19,100, an increase. This does not affect the total production, but reduces the average yield of each producing well.

Speculative operations, since our last issue, have clearly shown that, in spite of the changed conditions referred to, and the reasonable prospect of higher values, would-be investors have lost all confidence in the stability of values for any length of time. Transient buyers and sellers are alike timid, while those able to purchase oil and with faith to retain it have realized a fair profit.

Refined ruled low during October, but with the advent of November the quotations were advanced at American ports and at Antwerp, being from 8¼ to 8¾c. and from 19 to 21 francs, respectively.

The increase in stocks for October, was 138,762 barrels. For the present month, the indications are that it will be about 229 000 barrels.

Altogether the situation is one of considerable reassurance for those who regard $1 as considerably below the legitimate value of a barrel of crude oil.

The healthy advance already referred to, has been stimulated by heavy buying at all points as well as by the rapid decline of the latest Forest county wells. The fact is slowly but surely being forced upon the trade that the reliable producing district cannot be enlarged, even by active and persistent drilling. The prospect of $1.50 oil in the near future is more clear than at any time during the present year. At the same time, the indications are that if this price is to be attained, it will be through a legitimate advance rather than through speculative excitement, the experiences of the past two years having taught investors some costly lessons.—*Stowell's Petroleum Reporter.*

A Crumb of Comfort?

The Limited Liability Review (English) in mentioning a sudden rise which lately transpired in shares of the Hammond Electric Light Company, advises its readers that this is but the result of market manipulation. It tells the unfortunate stockholders to take advantage of the golden (?) opportunity, for it is never likely to occur again, for these shares will assuredly soon find the low level which they would now be at but for market operations.

[Official Report.—Continued from page 248.]

Eleventh Annual Meeting of the American Gas Light Association.

Held at Teutonia Hall, New York City, October 17 and 18.

Second Day—Morning Session—October 18.

A CHARITABLE MEASURE.

Mr. Floyd—It may, perhaps, not be improper for me to announce to the Association an accident which occurred yesterday. As it is known to most of you, the ladies of members of the Association, who are now visiting the city, were entertained yesterday by the Committee of Arrangements, and were driven in carriages to the various places of interest in and near the city of New York. It appears that one of the carriages, containing three ladies, met with an accident; the driver was thrown from his seat, being so severely injured that his death is announced this morning. The accident might have been a very serious matter for the ladies, had it not been for the fact that the Committee had taken the precaution to send a gentleman with every carriage. In the carriage to which this accident happened, Mr. Harbison was seated; when the driver was thrown from his seat, and the horses started to run away, Mr. Harbison got over the front seat of the carriage, climbed to the pole and caught the reins in time to prevent a runaway. (Applause).

Mr. Harbison—I wish to apologize to the Association for absenting myself, for the first time, from its sessions, and I thank the Lord that I did so yesterday. In that carriage were the wives of three esteemed members of this Association. The family of the poor driver, being practically in destitute circumstances, I move that the Treasurer of this Association be authorized and instructed to pay, from the funds of this Association, to the representatives of those orphan children, the sum of $100. I think it is due to ourselves, as members of the Association, to take some such action in this particular case. It is fitting that we should make some proper recognition of the family who are by this unfortunate accident left without support. There are, as I understand, three or four children who are left orphans by this accident.

Mr. Denniston—I move to amend, and make the appropriation $300.

Mr. Harbison—I will accept that amendment.

Mr. Harrington—I move to amend by making it $100 for each child.

Mr. Harbison—I do not know how many children there are, but I will also accept the last amendment, and hope that it will prevail.

Mr. Stanley—Would it not be better to refer the matter to a committee to ascertain the facts, and afterwards decide as to the proper amount of appropriation. There may be ten children.

Mr. Harbison—What if there are? Suppose there are twenty children; if there is not money enough in the treasury to give an appropriation of $100 to each, I am willing to pay my pro rata share to raise that amount. I think that it is due to us as members of the Association to adopt such a resolution, and that we should all feel that we had done something in helping this afflicted family by taking action as members of the Association. I hope that the last amendment will prevail, and that we will contribute $100 for each child, no matter whether there be three, five or twenty. Let that amount be appropriated, and if there is not sufficient money in the treasury to make the payment, let an assessment be levied upon the members for the deficiency.

Mr. Stanley—I do not object to that; it is all very well; but the question with me is, whether it would not be better to have a committee take proper action in the premises. No matter about the number of children; let us make an appropriation for each; and if there is not enough money on hand I would advocate the appointment of a committee to raise a subscription from the members in order to meet the expenditures.

The Secretary—There is plenty of money on hand.

Mr. Graeff—I am one of the newest members of the Association, and perhaps it is not fitting that I should express an opinion upon this proposed action; but still I wish to say that I do not think it worth while for the Association to do what Artemus Ward called "slopping over." I believe in contributing a fair amount to the family of this driver. While I am willing to vote to the driver a respectable sum, I do not see the necessity of going around among the members for the purpose of raising a subscription; although, if that be done, I am willing to put my hand in my pocket and contribute in equal proportion with the rest. I do not, however, see the necessity for the Association beggaring itself because we were unfortunate enough to have ladies in the carriage which this man was driving at the time. I do think that the Association owes a votes of thanks to Mr. Harbison.

The President—The question is on the amendment to the original motion, to make an appropriation of $100 to each child.

Mr. Harbison—The amendment is accepted, and made as the original motion.

M. F. Thompson—Should not somebody be designated to receive this money in behalf of the children?

Mr. Harbison—It is to be given to their legal representative. I will, however, add to the motion, that a committee, consisting of the Treasurer and Mr. Floyd, be appointed to receive the money and pay it over to the proper person; then Mr. Floyd (whose sons were of the party yesterday) will investigate the case, and see that the money is placed where it will do the children the most good.

The President—It is moved and seconded that the Secretary and Mr. Floyd, as a committee, be instructed to investigate the condition of this family, and to pay them, from the funds of this Association, the sum of $100 for each child left orphaned by the accident.

Mr. Stanley—It seems to me this money ought to be placed in the hands of somebody to be spent as the case may require.

The President—I think that that can be left to the discretion of the committee.

Mr. Stanley—If it is left in the hands of this committee, I am perfectly satisfied.

Mr. Starr—Are we to understand that the instructions of this Association are that the committee should pay the amount over at once, or that it shall be used by them from time to time, as it may be needed, by the children, and as they may deem best and wisest. It may be bad policy to at once put $400 or $500 into the possession of this family.

The President—I think that we can safely leave that to the discretion of the committee.

Mr. Starr—If you will leave it to the discretion of the committee, to use the money as they may think best, I am perfectly satisfied.

Mr. Floyd—I think that it will be well to leave this matter entirely in the hands of the committee. We will distribute the money in whatever way shall seem to us best for the interests of the children, and with the view to having them properly taken care of.

The motion, as amended, was agreed to.

A recess was then taken until 2 P. M.

Second Day—Afternoon Session.

The Association re-convened, at two o'clock P.M.

The President—The next paper to which we shall have the pleasure of listening, will be read by T. O'Connor Sloane, Ph. D., on a "Self Registering Photometer."

Mr. Sloane then read the following paper:

SELF REGISTERING PHOTOMETER.

Several attempts have been made, during the past few years, to construct a self-registering photometer. One of these was founded on a very curious property of the element selenium. The electrical conductivity of this element varies with the degree of light to which it is exposed. As it is a very simple matter to register the intensity of an electrical current, it might be supposed that in this a basis might be found for registering the intensity of light. The trouble, however, in attempting its application is in producing the original current. To carry out the idea it will be seen that this, too, must be constant, and nothing is harder than the production of an absolutely constant electric current.

Another attempt at the solution of this problem was sought for in the jet photometer. A piece of sensitized paper was made to slide, by machinery, across a slit through which the light from a jet photometer flame fell upon it. The height of the flame was thus photographed upon the piece of paper, and this was reduced, by the usual scale, to candle power. Starting with an unreliable instrument this method of reading only added to the original defectiveness of the instrument itself. It is hard enough to read a jet photometer accurately as far even as the absolute height of the flame is concerned. Then, when such reading is reached, the trouble only begins, for its ratio to illuminating power unfortunately is very variable, and where the gas varies largely in specific gravity, it is quite worthless. If adjusted for one gas it will not answer for another. These original defects, well known to all of you, of the jet photometer, were supplemented by the imperfect and hazy photograph of its flame that was obtained. There was no precision, or even appearance of precision.

Some years ago, a paper was read, before either this or the New England Association, by Mr. Goodwin, giving the results of some experiments with the scientific toy, called Crooke's Radiometer. Mr. Goodwin found that the rotations of the wheel of this instrument, or, in more general terms, its intensity of action, varied in the ratio of the square of its distance from a source of light. From this, the conclusion was drawn that the instrument probably was affected by light radiations, and not by heat radiations. It is now considered, however, an established fact that it is the radiations of heat that do affect the instrument in question. This might seem to upset Mr. Goodwin's conjecture, but it does not. The accuracy of his work is verified by an almost physical certainty. This certainty is the identity of radiant heat and light. The most acceptable theory, at the present day, is that both these forces are the same, and that radiant light is a phase of radiant heat, and included in it.

The heat radiated by a flame consists, for the purposes of this subject, of two parts—obscure heat, and luminous heat, or light. These two elements can be separated with considerable accuracy. A solution of alum contained in a glass trough does it very effectually. Only a small percentage of obscure heat can pass this screen. If in front of a gas flame we place a trough, perhaps half an inch thick, and four or five inches square, with glass sides, and filled with such a solution, the radiations of heat from a hot bar of iron, for instance, assuming it to be heated below redness, will be almost entirely cut off, while a very large percentage of the heat from a gas flame will pass through. We can simplify this. We find that a glass plate will cut off a great deal of obscure heat. Therefore, if we pass the rays from a gas flame through such a plate we shall have a separation of the rays into two parts. One composed almost entirely of obscure rays will not get through the plate—the other, consisting of a mixture of obscure and luminous rays, will go through. You can readily see what the effect of this is. A concentration of the luminous heat, or light rays, takes place, and we have a purer light radiation after the light passed through the plate than before.

Then, if a means for measuring mechanically such radiant light can be devised, we have one of the elements of a registering photometer. We have seen, from Mr. Goodwin's experiments, that Crooke's radiometer furnishes us with it. But this instrument cannot well be made self-registering, and, from a long series of quite exhaustive experiments, I succeeded in constructing a peculiar thermostat, whose motions were affected by radiant heat or light with great exactness, and whose motions, moreover, were susceptible of registration.

Here was the first element. The next was to obtain a gas flame of exact comsumption. This was a great difficulty. If we go through the whole range of gas appliances, we will find none that will afford us such a flame. The most perfect governors are not adapted to do it, for the amount of gas they pass will vary with its specific gravity.

So fully does this constitute their principle, that, by measuring the gas passed by the most perfect of them, the specific gravity of the gas can be ascertained approximately.

This difficulty I overcame by an application of the great time measurer to a meter. A heavy pendulum was attached to a meter working in connection with an escapement attached to the drum. This worked a peculiar governor, and effected two things. It first made the meter, if a wet meter, which, for accuracy, is always to be preferred in scientific work, rotate with exactly the same speed whatever the pressure or specific gravity of the gas. In the second place, it kept the water in the interior of the meter drum at almost exactly the same height, whatever the pressure and specific gravity of the gas might be. For the most extreme variations in these factors the range was quite immaterial perhaps not the hundredth part of an inch.

Thus, again, the meter could be, and was, made to perform two functions. One was to regulate exactly the gas that passed, the other was to act as a time piece.

These two pieces of apparatus I combined. The meter was made to bear an Argand flame on its top, and to carry a support for the thermostat. This flame was regulated so that it always burned five feet per hour. The radiations from the flame, after two siftings, one through the glass chimney, the other through the glass of the thermostat, acted on this instrument, and caused it to move. The meter also moved a strip of paper across its top, and, on this strip, on exactly the same principle as a pressure gauge, the movement of the thermostat was recorded. By preference I used a fine needle point, which perforated the paper at intervals of a few minutes; I believe it was about one puncture every five minutes.

Two photometers, one very primitive, with which I performed my early experiments, have been completed and have proved wonderfully accurate. I incline myself to the belief that, properly used and occasionally standardized, they can be made more accurate than the bar photometer as ordinarily used. The latter is always subject to personal errors, and variations due to the candles.

I have tested the thermostat rigorously, and have found it of undeviating accuracy, through a wide range of candle power. From this it follows that the whole instrument, properly used, will be as accurate as the thermostat. Such accuracy will exceed that of the bar photometer as ordinarily used.

There is one source or variation which has to be provided for, and that is the light of the sun. This affects the instrument seriously, but can be easily provided against. The instrument may be kept in a dark room—where this may be inconvenient, a simple case, such as used for the jet photometer, but blacked inside, will answer, or a still smaller case resting on top of the meter, and inclosing the flame and thermostat, may be used.

The size of the whole apparatus can be gleaned from what I have said. The base of it is a photometer meter. On top of this comes the flame, thermostat, and registering apparatus. This increases the height to about thirty inches. This is the whole apparatus.

There is really no difficulty in using the apparatus, though a little cleverness is required. Any one who can really be said to understand an improved bar photometer can use this one without trouble.

Discussion.

The President—Have you any record of the tests which you have made?

Mr. Sloane—I have a record of a very extensive series of experiments which were made by me. I had the gas come in directly from the gas works, connected with an old photometer, and had the same gas connected with the new photometer. I continued to photometer the gas hour after hour, and took five or ten minute observations, at the same time reading the new photometer. In that way I had a variation of candle power, with my photometer, of from 10, to 18, and 20-candles. Sometimes the variations would be larger still, because, when the purifiers were open, the candle power of the gas would run very far down. In all cases I found that the photometers ran together as accurately as could be expected, and any difference which I found was to be attributed to my personal error in reading the bar photometer.

On motion of Mr. Sherman, the thanks of the Association were tendered Dr. Sloane for his interesting paper.

NOTES ON EXPERIENCE WITH IMPROVED FURNACES.

The President—We have no other paper on our list, and we have an hour remaining which may be devoted to any topic which will be of interest to the Association. We had yesterday some very interesting notes from Mr. Stedman in regard to the furnaces which he is now using. If Mr. Slater is in the room, he may be able, from his extended experience with regerator furnaces during the last twelve months, to give us some interesting data; and we would all very much like to hear from him as to the results which he has obtained.

Mr. Slater—I do not know that I can report anything in addition to what I have already said at previous meetings of the Association. Our furnaces continue to do about the same work as heretofore.

The President—The fact that you are still satisfied with them, will tend to encourage many members who have not yet tried them.

Mr. Slater—I will not say that we are well satisfied with them, because we expect to improve them. We do not think that they are the best that can be devised; but they are the best that we have tried so far, and we are able to do better work with them than we were with the old furnaces.

The President—And, with your experience, you would not go back to the old furnaces?

Mr. Slater—Not at all. We have been able to average from 10,000 to 11,000 feet per retort all the while, and are able to do that with the same kind of fuel, and with the number of pounds of coke to the ton carbonized as before stated, which is about 16 pounds of coke to each 100 pounds of coal carbonized.

The President—Have you been troubled at all with pitch in your mains. or with stopped pipes?

Mr. Slater—No.

Mr. Stiness—What percentage of coke is that?

Mr. Slater—It is 16.17 per cent. of coke to each 100 pounds of coal carbonized. I think that Mr. Stedman has done even better than that with his furnace. We have adopted the style of main which has a plate, on the back side of the main, at which we can take out the heavy tar or pitch, if there be any made. During the year and a-half that we have been using that main we have taken out but few plates.

Mr. Allyn—How about the durability of the furnaces. Has Mr. Slater used the furnace long enough to be able to give us an idea of about how many months a furnace of this kind will last before it is necessary to renew it?

Mr. Slater—I am not able to state, from memory, just how long a furnace will last. It may last a year and a-half or two years.

Mr. C. H. Nettleton—Since the last meeting I have continued to use the furnaces, and am very much pleased to be able to report that they are doing better for me now than I have ever been able to make them do before. Some of you, who were at the New England meeting a year or two ago, may remember that I there read a paper on the furnace in which, probably through bad management, I stated that I used up the retorts in about four months, and the furnace in about the same length of time; and that they then had to be rebuilt. Through not trying to force them so hard, I am able now to say that I have been using one furnace continuously for the last fifteen months; and that both retorts and furnaces are in such a good condition as to warrant me in saying that they will last, I think, for three months longer. I have not been able to reach the results which Mr. Slater or Mr. Stedman have accomplished. I doubt if it is possible, with the ordinary regenerative furnaces, to reach the result which Mr. Stedman gives. In some way, or for some reason, Mr. Slater is able to run three hour charges, and the rest of us cannot. I wish that we could. I can now produce between 8,000 and 9,000 feet per retort, our retorts being 14 by 22 by 9. I use, in firing the furnace, the coke from the two bottom retorts. From the ash-pan I save sufficient coke to nearly run the boiler at the works. If I should use that coke in the fire I presume the percentage would be about 23. To save the clinkering,

which would naturally result from its use, I prefer to burn it under the boiler, and think this is a more economical proceeding. A year or two ago the furnaces were run in such a way as to necessitate drawing the coke entirely out; then the men were obliged to pound the clinkers off of the furnace by the use of large heavy bars. During last summer, by the use of a new tool, which the stoker suggested, and which is a heavy bent poker, they reach into the furnace and thus break off the clinkers. I am happy to be able now to say that one of my furnaces has not been broken down for five or six weeks; and I hope to run it indefinitely without breaking it down. If I can do so, it will be a very great gain, because that work was trying on the furnace by reason of pulling it down, and it was excessively trying on the men, and on their tempers. To get the greatest economy in the running of regenerator furnaces, I think that we have got to make them in the recuperative form. We must heat the secondary air supply by our products of combustion. That must be accomplished; and that will effect a saving of coke. To do that we must so construct our furnaces, in burning the coke, to produce the carbonic oxide gas, and, at the same time, to burn our coke into ashes, and not into clinkers. How that will be accomplished, I do not know. We are all working to do it, and I think it will be done sooner or later. I think the true solution of the problem lies in building larger furnaces, and I have acted upon that theory and have built my furnaces so large that the coke will stand in them 5 feet deep. I hope, at the next meeting, to be able to report favorable results from those furnaces; but that is, of course, a matter for the future to determine.

EXHIBITING A SERVICE PIPE WHICH HAD BEEN FUSED BY THE EDISON CURRENT.

The President—We have here a service pipe, sent by the New York Gas Company, which has been fused by an electric light wire. Mr. Lees is in the room, and we would be much obliged to him for such information as he can give upon the subject.

Mr. Lees—The pipe was the usual iron gas service, lap welded, 1¼ inches in diameter and 3-16 thick, perfectly sound, running through an area in the ordinary manner to supply a building. In June last a fire occurred at that building; we found, on investigation, that the electric wire passed alongside of the pipe. The insulator covering of the wire becoming broken in spots, the electric current caused this injury to the service here shown. The immediate effect was to let the gas escape, ignition immediately following, with the consequence that a lively conflagration resulted. The section of pipe shown (for illustration of which see JOURNAL of August 2, 1883) was cut off by the Fire Department officials. This is not the only case of injury by reason of contact with electric light wires. Only this week we had a meter destroyed. A supply wire was located near a meter, and this is what happened: A gentleman, while seated at a desk in his office, noticed what he called a flash of light; he was curious enough to institute an immediate search as to its origin, and found that the "flash" was in reality an electric spark developed by reason of a switch-key being located near the meter. The spark left the key, and impinged upon the meter, burning a hole through it into the gallery, and causing a slight explosion. The gentleman immediately shut off the gas supply, and his investigating turn of mind thus probably saved the building from destruction by fire. We have had perhaps half a dozen cases of trouble from the electric light wires, but these two are the freshest in my memory. I wish to repeat the invitation of yesterday—that any gentlemen, choosing to visit our works, will be cordially welcomed there. Our manufacturing establishment is only a short distance from here; and whenever any of you are in the city we will be glad to see you. We have made some changes in our plant which may, perhaps, prove interesting to you. We have a meter which is quite a curiosity, by reason of its size, and our holder is a little different from the ordinary style.

The President—As your company has been the one most directly brought into competition with the Edison incandescent light, the Association would like to hear from you something about the progress made in electric lighting in your district, and also its effect on your gas consumption.

Mr. Lees—I was asked that same question, by a director of our company, at a meeting held some time since. He inquired what effect the electric light had had upon our business. I do not know any better illustration to give than by comparing it to the effect exerted by the presence of a fly on a loaded coach. The fly is there; but the horses do not know it. I know that the electric light is in our district; I occasionally see one of them; but as far as regards any tangible effect exerted upon our business we do not know that it exists.

Mr. Greenough—Were those holes in the gas pipe just shown fused by an incandescent or an arc light supply wire?

Mr. Lees—By an Edison incandescent light wire. Both the accidents mentioned by me were caused by Edison wires.

The President—The managers of the American Institute Fair have sent us 50 tickets of admission. Any of the members of the Association who desire to visit the fair, and see the Clerk gas engine in operation, can call upon the Secretary for tickets. Mr. Goodwin has also handed me some cuts of the new Clerk engine, which he has just received; they can be found upon the desk of the Secretary for inspection by members of the Association.

On motion of Mr. Sherman, the thanks of the Association were tendered to Mr. Lees for his attention in presenting the pipe to the Association, and explaining the circumstances leading to its injury.

Mr. Allyn—If it is in order, I would like to make a motion that, at our next meeting the Committee of Arrangements be instructed to have programmes prepared and printed, in order that the members may know what the proceedings at each session of the Association will be. I think it is extremely desirable that we should know in advance at what hour the different papers are to be read. In any city where we meet there are many places of interest that members would like to visit; and by knowing when certain papers are to read, we can divide up our time to the best advantage. The expense of printing a few programmes would be very slight, and then every member would know just what the proceedings of each day would be.

The President—That has always been the custom heretofore. With regard to reading papers, I wish to say that unless the members of the Association will carry out the rules of the organization they will never be able to know in advance when papers are to be read. There is a clause in our constitution which provides that all papers to be presented at any meeting of the Association shall be sent to the Executive Committee before the meeting, in order that the Committee may know exactly how many papers will be read, and in order that they may make just such a programme as has been asked for. Until the very hour of this meeting of the Association, we did not know what papers would be presented to us. None of the members responded to the printed notices sent by the Secretary asking for that very information. It is impossible to make up a programme beforehand unless the data upon which that programme is to be based can be ascertained. It is proper enough that this resolution should pass, instructing the Washington Committee of Arrangements to issue a programme for the next meeting; but the Committee of Arrangements cannot compel the members to hand in their papers unless they choose to do so.

Mr. Helme—I think it will be necessary to have a Committee of Arrangements appointed for the Washington meeting. I do not remember that any has yet been named.

The President—The Committee will be named presently.

Mr. G. S. Page—As the subject of the work of the local Committee of Arrangements has come before the meeting, it may be proper for me to say a word in explanation of what has undoubtedly been the experience of very many of those who have come here from a distance. Certain members of the Committee endeavored to make arrangements with a number of our larger hotels for the accommodation of the 100 or 125 members who we anticipated would be in attendance at this meeting. As a matter of fact, we could not make an arrangement with any hotel in New York to give certain accommodation to any number, not even so few as 25, until General Roome became associated with the Committee, and personally went to the landlord of the Westminster Hotel. He agreed to care for 75 guests in his own house, and to guarantee accommodations in other hotels near by, through interchange with those hotels, for 75 more. October is the busiest month of the year for the hotels in the city of New York—a city which is not well accommodated with hotels. There are more business people now visiting the city, and more foreigners arriving, than ever before, and many more than can be properly accommodated. The hotels are filled to overflowing. We trust, therefore, that our friends, having heard this explanation, will be the more ready to make allowances for any inconveniences which they may have suffered by reason of their failure to find in this city the magnificent accommodations which have been furnished them in Boston, in Chicago, and in other cities visited. The Committee had endeavored to do all that they could to make your presence here comfortable and enjoyable; but they have had this difficulty to contend with. Perhaps I might also appropriately make a reference to this place of meeting. In the hotel there was no room large enough for the meeting of the Association, and it was necessary to look elsewhere for a hall. Therefore we took this room (which is not an exceedingly agreeable place), because it was convenient to the hotel, and because it was thought to be of a proper size. We could have got larger halls, but we did not think it wise to do so. Will you, therefore, accept this as an apology from the Committee, who have endeavored to do the very best they could under the circumstances.

STOPPED STANDPIPES.

Mr. George Cornell—If there is nothing now before the meeting, I would like to refer again to a matter which was alluded to by Mr. Pratt in his paper of yesterday. It was an allusion to the nuisance of stopped standpipes. I have thought that perhaps it was my duty to give the little experience of our company. We have had no trouble with stopped standpipes for about 14 years. I do not know that we have had a single stopped standpipe in that time. The way in which we have prevented it is this: Our superintendent, about 14 years ago, devised a plan of keeping the standpipe cool by having the pipe doubled, and having a water jacket around it, and keeping the space

between the two pipes full of water. Of course it was some trouble to arrange that on a bench of retorts with double standpipes, with all the necessary small pipes to bring in and carry off the water; and this was especially true when we attempted to adapt it to mains of large size; it was then a very complicated arrangement. Then our superintendent made a little deviation from that plan, which, after a year or two of experience, he found to work equally well, and which is much simpler. The arrangement is this: He has the mouthpieces cast with a bowl on the top, through which the standpipe passes. That bowl will contain about two gallons of water, and a current of water is kept passing through all these bowls, entering near the top of the retort, passing in a zigzag direction to the bottom, and then passing out. It answers the purpose admirably.

Mr. Helme—How deep is that bowl?

Mr. Cornell—Perhaps there is not more than 6 or 8 inches depth of water.

Mr. Helme—I think that you, Mr. President, had some trouble with stopped standpipes in New Orleans; but it strikes me that the stoppage there was very much further up.

The President—It was everywhere.

Mr. Helme—I thought so about that time; but I thought that the fellow who was trying to unstop them knew where it was, and what he was about.

The President—The most remarkable thing connected with those stoppages is that, when I went home from the meeting of the Association, determined to try the only thing we had not tried to prevent the stoppages, I found that, in the meantime, the stoppages had ceased of their own accord; and, under identically the same circumstances of working, I did not have any trouble of that kind during the next twelve months.

Mr. Helme—Out of quite a large number of benches, we would have only one bench stopped this week and another bench stopped next week; and Mr. Forstall admitted that he knew of no reason why they should skip about in that way. I think it is very singular if a bowl of water 12 or 15 inches deep on the mouthpiece will accomplish that thing for everybody. I am inclined to think that there is something peculiar about that case, and that the remedy would not be as efficient with others as it has been with Mr. Cornell.

Mr. J. H. Walker—I have had a little to do with stopped standpipes, and I would like to hear all about it from somebody else. When I am in trouble I like to hear from others who are in the same trouble. I used to have a great deal of bother from stopped standpipes. I tried all sorts of things—water, and steam, and everything else. There is a good deal of trouble in the water and steam business. I increased the size of the standpipes, and that helped me just a little, in delaying the stopping up. I then tried all kinds of pipe cleaners. I found that the trouble with the pipe cleaners was that they would not go up the pipes without somebody at the end of them. I finally adopted a pipe cleaner that cuts both ways. It is made of steel. It cuts up, and it will cut as it comes down. The only way that I can keep my standpipes clean is by using this instrument after every charge. Since I have used that I can say that I have never had the lid of a retort taken off to clean the standpipe. I make the largest cutter within half an inch of the diameter of the largest pipe. I insist that the pipes shall be clean when they are first put up, and I insist that the cleaner shall be put up at the end of each charge, in order to keep them clean. I do not try to put up a 2-inch cleaner in a 6-inch pipe, as that makes only a two inch hole, and the pipe stops up again right away. I wish to ask the gentleman who uses the water jacket what kind of heats he had which enabled him to keep the water cool all the way up.

Mr. Robert Baxter—Stopped standpipes have been discussed a great deal, and as no remedy has apparently been found for them, I will relate my experience. When I used coal from the Clover Hill Mine, in Virginia, I did not know anything about stopped stacks, and I did not know anything about naphthaline; but since I have been using coals from Pennsylvania and from West Virginia I find the standpipes and the bridge pipes stopped solid, and have to be frequently taken down and burned out. It has been impossible to get the mass of naphthaline and pitch out of the pipes in any other way than by building a fire in the yard and putting them on it. I have known them to be stopped in half an hour after they had been cleaned. I attribute such stoppages to the kind of coal which we use, and to the heats that we employ. When our heats are not very high we are not troubled with stopped standpipes; when running at very high heats we are liable to frequent stoppages. I find, even in different samples of coal from the same mine, that one week we will have stopped standpipes, and another week, with the same coal, but probably from another portion of the mine, we will have no stoppages at all, but work right along very easily. I have been getting along without any stoppages for nearly the whole summer. But just before leaving home we had a good deal of annoyance with stopped pipes, more particularly with the bridge and dip pipes. We use a cleaner in the standpipes, and keep them comparatively clean; but we find it a very difficult matter to keep the bridge and dip pipes in a serviceable condition. Before I left home my foreman asked me to find out some way of getting rid of stopped pipes; and I would like to do so.

Mr. Starr—What kind of cleaner do you use?

Mr. Robert Baxter—We have a strong cleaner that follows up the inside of the pipes. It spreads out as it forced up the pipes.

Mr. Starr—We have been using a cleaner for the last ten years which cuts as it comes down, and when the charge is changed we introduce that cleaner. We push the cleaner up on one side and pull it out on the other, and it cuts everything out. We do not have trouble from stopped pipes over once in three months. We never have any trouble at all with the bridge and dip pipes.

Mr. Sherman—I will call attention to a very simple device, which Mr. C. V. Smith, of the Manhattan works, called my attention to, for cleaning out stopped standpipes. He informed me that when he scurfed his retorts with the Edge process he allowed a jet of steam to enter the standpipe at the same time, and that thoroughly removed any obstruction, and thoroughly cleaned it out.

Mr. Robert Baxter—I have tried steam in the standpipes, but it does not prevent their stopping. Every time a charge is put into the retorts the standpipes are thoroughly cleaned out.

Mr. Harbison—I wish Mr. Sherman would tell us something further about Engineer Smith's remedy. How often does he clean and scurf his retorts? And has he any stopped standpipes between times? It ought not to be necessary to clean them every week or month, and have stopped standpipes occur in the meantime. It is all very well to clean out the standpipes whenever the retort is cleaned; but how often is it necessary to (or how often does he) clean the retorts?

Mr. Sherman—He did not mention the time; he only called my attention to the fact that a jet of live steam would remove anything which collected in the standpipes. I have had no occasion to try it myself, because I do not have any stoppages.

APPOINTMENT OF COMMITTEE OF ARRANGEMENTS FOR NEXT MEETING.

Mr. Hyde—I understand that no Committee of Arrangements for the Washington meeting has yet been appointed. I therefore move that a committee of five, with the Secretary, be appointed by the Chair, with power to make all necessary arrangements for the next annual meeting, to be held in the city of Washington; such committee to be styled the "Committee of Arrangements."

The motion was agreed to, and the President appointed the following Committee of Arrangements:

Messrs. Geo. A. McIlhenny, Washington, D. C.; Wm. Helme, Phila, Pa.; Fred. J. Davis, Waltham, Mass.; Thos. Turner, Charleston, S. C.; Wm. H. White, New York city; and C. J. R. Humphreys (Secretary-elect), Bergen Point, N. J.

Mr. Harbison—It is a well-known saying that "merit hath its reward," or ought to have its reward, in all cases. We have to-day elected a gentleman (who, as some people say, does not belong in the United States, because he hails from the State of New Jersey) to the office of Secretary and Treasurer of this Association, to perform the duties appertaining to the office now held by our valued friend Wm. Henry White, who is, as everybody knows, a particularly modest man. But there are those of us in New England who know and love this man as we do our sisters and our cousins and our aunts. We love him as a brother, and we love him as a past—very soon past—Secretary and Treasurer of this Association for a number of years. I think it would be unkind to allow this meeting to terminate its session without some expression from the members of the Association in regard to the way in which he has performed his duties during the years in which he has been our Secretary. We all know that he has been as a father and as a brother, as an adviser and confidential, and, I may add, financial friend, to us under any and all circumstances. He has never left us in the lurch. When we have been away from home, we have never been thirsty—when he has been in the immediate vicinity—for any length of time after he found it out; and he very often knew the fact before we realized it ourselves. (Applause.) I wish, as an individual member of this Association, coming from a city which, as most of the members know, is noted for the modesty of its citizens, and also in behalf of the gas works which I represent personally, as well as in behalf of all these gathered brethren, to move that the thanks of this Association be tendered to William Henry White, for the earnest, faithful, gentlemanly, loving, brotherly way in which he has always been ready, during all these years, to stand by our wants and necessities, and to provide for them; for the way in which he has kept his records—and his record is good; I do not know anything against it, and I know him pretty well. I therefore move that the thanks of the Association be tendered to him for the able and efficient manner in which he has performed his duties during the past years as our Secretary and Treasurer. I know that his bank account is good, from the report which he has made as Treasurer of the Association; and I know that he leaves the position with credit and honor to himself, and with a good credit to our account in the banks where the money is deposited. (Applause.) I move that the thanks of the Association on this motion be taken by rising.

The motion was carried unanimously by a rising vote.

Mr. W. H. White—Mr. President and Gentlemen of the Association: It has been frequently said, and frequently very well said, of some lately departed brother, that nothing in his whole life so became him as his taking off. Possibly, in this moment of your intense gratitude that I shall no longer preside at this desk as your Secretary at your annual meetings, you offer this very touching and spontaneous manifestation of your regard for me in the manifold positions in which I have served you. But, all joking aside, it is very touching to me, because of the very deep friendships I have formed with the members of my profession in this Association. I was one of its earliest members. In fact I was one of its dry nurses, when it was very much of a babe and a suckling. I took to it, stuck to it, nursed it, worked with it, and pulled it out of many troubles. It may have slipped the memory of all, except some of our oldest members, that, at one very trying period of our existence, this Association was not only very near the grave, but it actually had one foot in it; for it had appointed a committee to consider the advisability of giving up the effort to establish the Society. At a meeting held in New York city, at the old Masonic Hall, on Thirteenth street, in 1873, at a time when I had just risen from a bed of illness, I was, very much against the advice of everybody at my home, driven over to this Hall, reaching the meeting just in time to find ten or a dozen men who were there, sitting around in a very lachrymose style—looking, in fact, as if a corpse was about to be borne out. Inquiring the matter of business under discussion, Mr. DeMill, who was then in the Chair, said that they were considering the advisability of discontinuing the Association. My dear friend, George McIlhenny, was there; and I said to him, "This thing ought not to be. Who has any 'pet corns' that I can tread upon immediately?" He named one or two gentlemen, and I proceeded, in my roughshod way, to get on to their 'pet corns,' and stirred them up in the most effective way for about an hour; and when the committee came in to report that the thing was dead before it was born, that committee found there the liveliest body of men that ever you saw. They voted down the resolution to disband; and right there and then this Association took a new start, and it has been a success ever since. Its success, I fancy, is largely founded upon liquid refreshment. As a member of its Executive Committee for some years, and afterward in my present position, I saw that this Association (as has been very kindly said by Mr. Harbison) never was hungry or thirsty if I was around. At that time there were no gas companies in New York or Boston who would extend to us a welcoming hand, or spread before us banquets at two hotels; but Mr. Geo. Kreischer and myself invited the 14 or 15 members around to a neighboring beer saloon, where the festive sausage, the lively beer, and the enticing rye bread were passed around at our expense, and to the joy of the invited guests. It was then and there voted that this Association lay as the corner-stone of its future existence the words "Refreshments; free, if we can get them; pay for them if we must—but get them!" I assert here and now that you have nobly, faithfully, and manfully stood by that corner-stone. It has become the landmark of the Association. It has been your laudable ambition to go onward from city to city, receiving the hospitalities that were freely offered. It is entirely owing to this free lunch system with which you started this organization that you are now in the possession of a handsome balance in bank, and are able to pay my successor in office the magnificent salary of $500 per year. In the new and sad decade that is now about to begin, the days of high salaries and paid-for refreshments, when you go out from here into a land not flowing with milk and honey—when you commence paying your own bills—you will have a sad trial in store for you. It will yearly use up all of your income. There will be no surplus in bank; there will be no funds left in hand; there will be nothing left to divide. Knowing this, and knowing that the time has come for me to retire from my position, I take the opportunity gracefully to retire, and to leave the loaves and fishes behind me in order that you may share them during my retirement. But I cannot and ought not to be jocular in noticing your extreme kindness to me. I have tried to serve you faithfully. I took from the hands of my predecessor, Mr. Nettleton, the duties of this office when he was willing to lay them down, because no other member seemed willing to take them up. I knew that I had to place my record alongside of one that could not be assailed or bettered in any way. I have endeavored to so transact the duties of the office entrusted to me that I could leave it with some credit to myself and no discredit to you. Your courtesy this afternoon assures me that you believe I have done my duty; and I assure you that I deeply and sincerely thank you for many warm friendships, for your appreciation of my efforts to serve you well, and for your many acts of kindness to me during many long years. (Applause.)

IN MEMORIAM.

Gen. Charles Roome—Mr. President and Gentlemen of the Association: Some five or six months ago Major Dresser, an honored member of this Association, and a warm personal friend of mine, felt that his death was rapidly approaching. He made a request which I did not know of at the time; when I went to see him he was so far gone, and was in such pain and suffering, that I was not able to converse with him. He said to a friend of his and of mine, "If I should not live to return, I ask, as a favor to me, that, when the next meeting of the Gas Light Association is held, General Roome will say a few kind words of me to my former associates."

It is not necessary for me to go into the history of his life. It was published in the American Gas Light Journal, and you have all read it there, I presume, for there is hardly a member of this Association who does not receive and read that paper. His request was that I should occupy but a very few minutes. Why he asked me to do it was perhaps for this reason: As I was the first President of this Association, and was mainly instrumental in its organization, and deeply and earnestly devoted to its welfare, he thought it meet that, as I had been honored by it, a few words spoken by me to the members would perhaps have more effect upon them than coming from any other member. I need only say that his history is there recorded. Being only an honorary member of this organization, I have, perhaps, no right to offer a resolution. But I hope that you will set aside a page of your record, and copy there this obituary, which is clear and distinct, and shows the history of this most excellent and good man.

I can say this of Major Dresser—that he was a gentleman in the fullest acceptation of the term. He was a noble-hearted man and a brave soldier. Educated for the service of his country, he devoted the best part of his life to that cause. As a Christian he was calm, humble, pure, and sincere. As an engineer he was highly accomplished; and had he lived he would have been to this Association one of its most valuable members. He loved his profession; he believed in it. He believed in its usefulness, in its aim, and in its dignity. He believed thoroughly in its mission, which was to promote the welfare of mankind. If he had any faults they were unknown to me. It seemed to me that in his composition he possessed all the elements which constitute a true man. He possessed in a large degree all those qualities which made him honored and respected by all with whom he came in contact, esteemed by all with whom he had any business relations, and dearly loved by all who knew him as I did. I knew him well; I loved him dearly. Therefore, in accordance with his injunction that I should say but a few words, I will say but very few. I ask that, in your proceedings, it may be stated that your first President stood before you this day to testify to the virtue, to the integrity, to the intelligence, to the amiability, and to the loyalty of one of the best men who has ever been among your number; one of the best and purest men that New York ever knew; one of the most sincere, truthful, genial and cordial men it has ever been my privilege to know. I never heard Major Dresser utter an immodest word; I can hardly conceive the possibility that he ever had an immodest thought. He was every inch a man. He was an honor to the name of man, and he was an honor to this Association. You will honor yourselves if you set apart a page in the records of your history to his memory as a memorial.

His wife passed from earth to heaven but a few days before it pleased God to call him to follow her upon the same journey. If there is anything in the hearts or minds of men to teach them to believe that the spirits of the just made perfect know what is passing on this earth, then I believe that the spirit of that brave, good, and noble man is permitted to watch over what passes now here among you.

He has children—a son and daughters. He was not a rich man; but the greatest heritage that any man can leave his children is that of an honored name. In that Major Dresser has left to his children a world of wealth.

I respectfully and earnestly ask that that obituary, which was written by some friend of his, and was published in the Journal, may be made a part of your proceedings; and it may be safely said that perhaps the oldest man in this business (I do not think the oldest in years), who for nearly half a century has devoted his life to the same object in which you are engaged, stood among you this day to give a heartfelt tribute of affection and respect to the memory of Major Dresser, and asked of you to honor his friend who has passed away, and who was your friend and the friend of mankind. I can say no more.

Mr. Vanderpool—We all agree with what General Roome has said regarding the late Major Dresser, whom I had the pleasure of knowing intimately from the time of his first connection with the interests we represent to the time of his death. Indeed, he was a dear friend of mine. We who were his neighbors in this vicinity feel that there is a void among us that can never be filled. I move that the resolution suggested by general Roome be adopted; that the obituary published in the American Gas Light Journal be printed in the proceedings of this Association. And I desire, in addition, to offer the following resolution with reference to the death of our honorary member Major Dresser, and our Past-President, Mr. W. H. Price:

Whereas, The members of the American Gas Light Association have, within the past year, met with almost irreparable loss by the death of their honorary member, George Warren Dresser, and their Past-President, William Henry Price; therefore,

Resolved, That this Association desires to express the deep sense of sorrow which it feels in the loss of two of its members, who, in the strength of their

manhood, have been stricken down; both of whom, by their earnestness, ability, and unselfishness, contributed much to the standing and welfare of the gas interests of the country, and who were always present at the meetings of the Association, and were most active in fulfilling its highest aims.

Resolved, That we desire to express our heartfelt sympathy with the relatives of the deceased.

Resolved, That a copy of these resolutions be entered on the minutes of the Association—that a copy of the same be sent bv the Secretary to the relatives of the deceased, and that the same be published in the AMERICAN GAS LIGHT JOURNAL.

Mr. M. S. Greenough—In rising to second those resolutions, I do it with much hesitation on one account, because it is so difficult to add anything to the eloquent remarks made by General Roome, and to which we have just listened. Still, if resolutions are to be offered in this Association in behalf of Major Dresser, I would not willingly give to another the duty of seconding them. I should consider it, and I do consider it, a privilege to be allowed to speak very briefly to the resolutions which have been offered. There are few members of this Association who have been so fortunate as myself in their intimacy with Major Dresser. It was not for some years after I knew him that I was thrown in close association with him; but twice, once in your company, Mr. President, and once since, I have had the pleasure of traveling with Major Dresser in other countries, and I there learned to know him, and to appreciate as I had not done before, what a thorough man, what an honorable gentleman, what a genial, warm hearted friend was underneath the surface which I had previously been acquainted with. In rising to second the motion, relative to the memorial of his life, I really feel a strong emotion. I am prepared with no set speech, nor would I deliver it, after the remarks of General Roome, if I had one. I simply wish to say that in losing Major Dresser, the Association has lost a member whose place it will be difficult to fill, and I myself have lost a friend whom it will be impossible to replace.

Mr. Harbison—After what has been said by General Roome, and by Mr. Greenough, it seems unnecessary, and, in fact, impossible, to add anything with regard to Major Dresser. We all knew him, we all loved him as a man (and that covers the whole ground), as a gas engineer, and as a friend. I second the motion which has been made by my friend from Newark in regard to the memorial of our beloved past President and friend, William Henry Price. I knew Mr. Price as perhaps no other New England man knew him. I knew him intimately and well. The pleasantest and most profitable hours I have spent, outside of the meetings of the Association, have been during the private talks from time to time at our meetings in various cities, where I have met him. As I have said, on my return home, the most profitable (to me) part of my journey has been my personal interviews with Mr. Price. We have sat hour after hour together, after the meetings of the Association had adjourned from day to day, engaged in private conversation. I once made a remark, in a meeting of the Association, to the effect that I aimed for, and believed that I had succeeded in obtaining, the moral support of the consumers of the company which I have the honer to represent. That expression caused a smile upon the faces of many of my associate members of this Association. But Mr. Price saw the undercurrent, and understood what I meant by it, and he manfully came up in the Association meeting and reiterated my statement, and sustained me in my position. That simple action of his formed a link of friendship between us which I could not think of having broken. I looked to him as I would to a father; and when I had been in diffiulties in my business, I have often corresponded with him, and as I have met him have asked him for information and have always received it. Mr. Price was a Christian gentleman in the highest acceptation of the term. He was a devoted husband and father—a father to more than his own family—to every young man of the American Gas Light Association. I feel that it is due to me, personally, as it is also my privilege, to add my humble word of testimony in his behalf, as one of the finest men who has ever been connected with this Association, and one whose place it will be almost impossible to fill. I desire, in addition to what I have said, to move, as an amendment to the resolution of my friend from Newark, that a copy of this resolution, properly engrossed, and framed, be sent to the families of our deceased brothers. Perhaps the mover of the resolutions had that in mind. I think one of the greatest prizes these families can have, and one which they will highly cherish, is such an expression of affectionate regard coming from this Association as a fitting tribute to the worth of these two men whom we all loved so dearly, whom we honored and respected so deservedly.

Mr. Vanderpool—I will change my resolution so that it will read in the way suggested by Mr. Harbison—that the resolutions be properly engrossed and framed, and sent to the families of the deceased.

Mr. Hyde—Having for many years been associated with Mr. Price in the Cleveland Gas Company, it is quite proper that I should say something with regard to him, and, at the same time, it is unnecessary for me to speak to you gentlemen who are connected with the American Gas Light Association regarding him, because you all knew him well. He was one of the original members interested in the formation of this Asssociation, and was an active member during all its years, and until his death. You knew him as a judicious and careful president; as a gas man who was thorcughly familiar with the business in which he was engaged; but I knew him in a different capacity. I have not before attended the meetings of the Association, and so I did not know him as a member of this body; but I have known him well as an employer, as a superior in our business, and in that position I knew him to be a judicious, careful, and competent president of our gas company. Though commencing the business as a new enterprise, as most of the gas men have, he has carefully studied its needs, he has been judicious in all his actions with this body and with his people; and in the management of the business at home he has ever striven to accomplish that which would result in the good of the consumer as well as of the company which he represented. He was a progressive man. His idea was to cheapen the price of gas so that it should reach every hamlet, and that the good results to be attained should be attained by increased consumption. As a townsman, he was recognized as a man of superior ability. He was active in public affairs, and has represented his city and county in various officcs; always known to the city of Cleveland as a judicious, careful, prudent man, and as one whose advice was always sound and good. He was an honorable, straightforward, and trusted man; and too much cannot be said in his praise. I learned to like him as a genial associate in the gas business. He always greeted me with a smile, and his word was always kind. I always had the utmost respect for him, and shall always retain in my memory the most affectionate regard for him.

Mr. Helme—I do not propose to add anything to what has been already said as to the two gentlemen whom we loved so much and respected so highly. They were well known to all of us. I have never been at a meeting at which they were not both present.

The President—You have heard the resolutions. I trust that it will be the sense of the Association that, in adopting them, the members will rise and unanimously express their appreciation of both of our departed friends.

The resolutions were then unanimously adopted by a standing vote.

PASSING A VOTE OF THANKS TO PRESIDENT FORSTALL.

Mr. Harbison—As our present session is probably the last we shall now hold for the transaction of business, I think that, at this time, it is due to us as members of the Association, and I feel sure, Mr. President, that it is due to you, as the President of the Association, that before we separate we should express in some way our high appreciation of you sir, personally, and also of you, sir, as the presiding officer of the Association during the year which is now drawing to a close; and that before adjourning we should place on our minutes some recognition of our appreciation of the intelligent, able and efficient manner in which you have presided over our deliberations. I therefore move you, Mr. Secretary, that the thanks of this Association be tendered to Mr. Forstall, our President during the past year, for the efficient and gentlemanly manner in which he has presided over our sessions. And I ask that the vote be taken by rising.

The resolution was unanimously adopted by a standing vote.

The Secretary—Mr. President, I beg to inform you that by a unanimous vote this Association tenders you its hearty thanks, for the able and impartial manner in which you have presided over its deliberations.

The President—Gentlemen of the Association: No one in this room can feel more keenly than I do how far short I have fallen of the position that your President ought to occupy. If I had been made of sterner stuff, I think there would have been much more reason for the resolution which my friend Mr. Harbison has moved. I feel that I have only done half my duty; and for your kind appreciation of what little I have done, I beg sincerely to thank you.

NATURAL GAS.

Mr. Harbison—I believe that it was understood this morning, but it had escaped my mind for a moment, that our friend, Mr. Hequembourg, of Bradford, Pa., was going to tell us something about natural gas, and we all should very much like to hear from him now.

Mr. A. C. Wood—I think that Mr. Hequembourg is not here; and, if he were, he is not prepared, at this time, to give to the Association any facts or figures with regard to natural gas. He will be prepared to do so at the next meeting of the Association. From time to time at our meetings this question of the use of fuel gas has arisen. A few years ago Mr. Vanderpool, of Newark, read a very interesting paper upon that subject, I think before the Society of Gas Lighting, in which he showed, from careful experiments and accurate tests, the relative value as between gas and coal for fuel purposes, the making of steam, and otherwise. At a meeting of the Central New York Association, a paper was read by Mr. Dunning, of Auburn, as to his experience in heating his dwelling by this means. Mr. Hequembourg, of the Bradford Gas Light Company, which, as you know, uses natural gas, has had a large experience in this direction, and has sent out more gas for heat-

ing purposes than any other man in the world; and he will be prepared in another year to give us some very interesting facts and figures in that regard. To-day he could only give you the relative value of this natural gas and coal; and I will state, in an incidental way, that it requires from 35,000 to 40,000 cubic feet of natural gas to obtain the same heating power as would be gained by the use of 1 ton of coal, or as the equivalent of 1 ton of coal. He proposes, during the coming year, to have that natural gas analyzed, and further experiments will determine its relative value as compared with coal, water, or oil gas, so that we can then get at this thing, and the paper which he promises to give us will be very interesting. I move that Mr. Hequembourg be requested to furnish the Association with such a paper at its next annual meeting.

The resolution of Mr. Wood was unanimously adopted.

DISCUSSION ON VARIOUS TOPICS.

Mr. Slater—I move that the Committee of Arrangements having in charge the next annual meeting, be instructed to make an arrangement to have the dinner for the members of the Association on the evening of the second day of the meeting; and that the expense of the entertainment be assessed upon all the members present.

Mr. Smedberg—I move, as an amendment, that all arrangements respecting the dinner be left to the Committee of Arrangements, with full power to act as in their discretion they may deem best.

The amendment was agreed to and the resolution as amended was adopted.

Mr. Harbison—I call upon the new Secretary and Treasurer to come forward and show himself, in order that we may know what manner of man he is.

The Secretary-elect, Mr. Humphreys, came forward, and was introduced by the retiring Secretary.

Mr. White—Gentlemen of the Association. It is my pleasant duty to present to you Mr. C. J. R. Humphreys, the Secretary and Treasurer-elect; I bespeak for him the same kind courtesy with which you have met all my efforts to transact the duties of my position; and I assure Mr. Humphreys of my hearty support, and that the aid of my personal experience in this office is at his command now and always. (Applause.)

Mr. Humphreys—Mr. President, and Gentlemen: I wish to tender my sincere thanks to you for the honor you have conferred upon me in selecting me to be the successor of my good friend, Captain White; and I promise you that if the duties of the office are not properly performed in the coming year, it will be for want of ability, and not for want of any earnest efforts on my part. I am sincerely obliged to Captain White for his very kind attention.

Mr. Page—Our Secretary has been for a long time the American correspondent of the London *Journal of Gas Lighting*. I mention this, thinking that it may not be known, generally, to the members.

Mr. Vanderpool—I wish, as Chairman of the committee on the addresses of Presidents Hickenlooper and Forstall, to make report that the committee have had a meeting, and have organized. They have partly considered the matters presented, and find it impossible to make a satisfactory report at this meeting. The subjects presented are such as to require a great deal of attention with respect to very many details. We have concluded, with the consent of the Association, to continue the organization of the committee, and, during the year, to put ourselves in communication with the principal companies in the country, and ascertain whether they are ripe for some such organization as has been suggested. We hope at the next annual meeting to be able to make a full and satisfactory report.

Mr. President—Mr. Pearson has recently tried, at Toronto, Canada, to stimulate the use of gas by an interesting exhibit of stoves and other apparatus connected with the consumption of gas. Perhaps a short account from him of that exhibit would be interesting, and we would be glad to hear from him.

Mr. Pearson—I do not think that there is any necessity for my attempting to give any detailed account of our exhibit. This much, however, I may say—that the success of the exhibit entirely exceeded my most sanguine expectations. The idea originated with me that it would be a very good thing to try, and for several reasons. In the first place, I was thoroughly satisfied that the claimed 2,000-candle power for electric lights was a fallacious one. I had seen some very large gas burners, and I was quite satisfied that 500, 600, or 700 candles in Bray or Siemens burners would exceed any electric light that I had ever noticed, at all events so far as the diffusion of the light was concerned. One thing that our exhibit did was this: it thoroughly demonstrated the fact that the claim for high candle power for the electric light was altogether fallacious. It also fully established the fact that the diffusion of light from a gas burner, of far less claimed illuminating power than that claimed for the electric light, was very much greater. I also felt satisfied that if our consumers only knew the value of gas as a cooking and heating agent, as well as for motive power, it would result in a very large increase of that class of consumers. In that respect my anticipations have been more than realized. I have a larger number of applications for the various kinds of gas stoves, and a larger number of applications for gas engines, at this time, than we have ever had during any similar period at any time of the year. And this has been brought about simply because the people were able to see for themselves the utility of gas for heating and cooking purposes. It is rather a difficult thing to get anybody to come to your office to examine gas stoves. I have issued circulars, time after time, with only a fair degree of success. But when people go to an exhibition and see for themselves the various articles shown they will, of course, also take notice of such articles along with the various other exhibits. I found that their seeing for themselves the gas stoves in the practical operation of cooking had a marvelous effect in changing their opinion with regard to the value of gas for that purpose. In some other respects our exhibit has also been very advantageous. For instance—I had one of the old fashioned gas burners placed over a test meter. The meters were stamped by the Government Inspector, so that anybody could see that they were correct. By the side of the old fashioned burner I had a good burner, and underneath them I placed a card saying, "These burners are consuming the same amount of gas. Examine them for yourselves." The exhibit had a good effect. It has shown our consumers that a good many of the complaints which they make about their gas was not owing to its need of illuminating power, but to the medium through which that gas was supplied. I did the same thing with regard to globes. I got a modern globe, with a 4-inch opening at the bottom, and by the side of it I placed an old fashioned globe, with almost closed openings, and I called attention to the difference in the steadiness of the light, comparing one globe with the other. I might enlarge upon the different points of the exhibit, but I do not think it necessary for me to say anything further. I can heartily recommend to the members of this Association, if they can get up a similar exhibit in their various localities, to do so. If it even costs you some thousands of dollars, if you are in a large city, I am satisfied that the exhibit will pay you in the course of a year or two over and over again. But I do not see why the Association itself should not take the matter up, and at the next meeting invite the various manufacturers to exhibit their gas engines, their gas stoves, and other things in competition. I do not see why you should not do this, and give us an opportunity to examine for ourselves the very best articles that can be had, and also have them on exhibition where the public can see them, and determine for themselves as to their utility. I throw out the suggestion as a practical one, and I think that if it could take some such shape it would be a very desirable thing for the gas interest in our country. I forgot that I was on the other side of the line. (Laughter.) It may be "our country" some day; I do not know. (Applause.)

Mr. Smedberg—With regard to Mr. Pearson's idea, when the AMERICAN GAS LIGHT JOURNAL was first started, Mr. Murray purposed a sort of exhibition at a central hall, where all objects interesting to gas consumers might be exhibited; but the thing fell through. It only shows how two great minds think alike. This is in no spirit of sneering at all, because my regard for Mr. Pearson is very great; but merely to say that the thing has been thought of before.

On motion of Mr. Harbison, the Association then adjourned *sine die*.

Experiments With an Otto Gas Engine.

The London *Journal* notes that, in a recent number of *Dinglers's Polytechnisches Journal*, one of the Editors (Dr. Ferd. Fischer, of Hanover) gives an account of some experiments he carried out with a 6-horse power Otto gas engine. He first analyzed the gas employed in driving the engine, and found its percentage composition to be as follows:

Benzene	0.69
Propylene	0.37
Ethylene	2.11
Methane	37.55
Hydrogen	46.27
Carbonic oxide	11.19
Carbon dioxide	0.81
Nitrogen	1.01
Oxygen	Trace.
	100.00

With the engine working at a low speed, the gaseous mixture, after explosion, contained 2.4 per cent. of carbonic acid, and 17.2 per cent. of oxygen; at high speed, after explosion, 6.5 per cent. of carbonic acid, and 9.9 per cent. of oxygen—the temperature being 400° C. It is, therefore, evident that the quantity of air taken in was from two to four times that necessary for complete combustion; and, further, that gaseous mixtures much poorer in combustible constituents than ordinary coal gas may be used in place of the latter.

In conclusion, the author gives a tabular comparison of the whole cost of working a 50-horse power gas engine, with a cost of working steam engines of the various types, and of the same horse power; and he draws therefrom the conclusion that gas is an economic substitute for steam, so long as its cost to the consumer does not exceed 2s. per 1,000 cubic feet.

ITEMS OF INTEREST FROM VARIOUS LOCALITIES.

The Youngstown (Ohio) Gas Light Company Makes a Reduced Schedule of Prices.—Mr. George Cornell, Secretary and Treasurer of the Youngstown Gas Company, informs us that on and after January 1st, 1884, a reduction of ten cents per thousand cubic feet will be made. From the date mentioned the following schedule of prices will go into effect:

A consumption of less than 5,000 feet monthly, per 1,000	$1.70
From 5,000 to 15,000 feet monthly, per 1,000	1.50
From 15,000 to 25,000 feet monthly, per 1,000	1.40
A monthly consumption of 25,000 feet and over, per 1,000	1.30

Mr. Cornell's company evidently believes in cheap gas, and comment on the above figures is quite needless; they carry their own explanation with them.

Suffocated by Gas.—On Sunday, December 2d, a visitor at the Central Hotel, corner of Canal and Elm streets, New York city, who wrote his name on the register as John White, of Buffalo, N. Y., but was subsequently identified as John Palmer, an oiler on the Key West steamboat John A. Dix, was found dead in his room the following morning, having been suffocated by inhaling illuminating gas.

Another Electric Light Company.—According to general opinion, it would seem as though New York city had been most plenteously supplied with electric lighting companies; but the news comes from Albany that we are to have yet another. The incorporators state that the company proposes to manufacture and operate apparatus for producing the electric light, and to introduce and employ inventions necessary for the purposes set forth; but more particularly to place before the public the improvements devised by Wm. Baxter, Jr. The incorporators are Messrs. John H. Herbert, of Brooklyn, N. Y.; Edward A. Quintard, Adolph D. Straus, Henry Altman, Amos Rogers, and Wm. D. Wheelwright, of New York city; Geo. N. Torrence, of Philadelphia, Pa.; and Wm. Baxter, Jr., of Jersey City. The capital stock is fixed at $20,000, with the privilege of increasing the same to $2,000,000.

Ripley (N. Y.) Wants a Gas Works.—The people of the town of Ripley, Chautauqua county, N. Y., want a gas works established in that place. No definite steps looking to the formation of such an enterprise have as yet been instituted; but it is very probable that next spring the Ripley folks will be accommodated.

A Gas Works for El Paso, Texas.—A company, with Mr. Z. T. White at its head, has been formed to build and operate a gas works at El Paso, the capital seat of the same named county, in Texas. El Paso furnishes an apt example of the rapid growth of towns in that great State. In 1870 it was a straggling place, containing but 520 inhabitants; and it now holds within its borders over 4,000. It is a lively, flourishing, go-ahead place, and Mr. White states that, when completed, El Paso's gas works will be second to none in Texas.

Another Gas Leak "Found."—An explosion of illuminating gas occurred at about 8:30 o'clock, on the morning of November 28, in the office of Messrs. J. Harmanus Fisher & Sons, stock brokers, located at No. 22 South street, Baltimore, Md. It has been customary to leave a small jet of gas burning all the time in the safe vault. On the date mentioned above, a clerk named John D. Howard opened the vault door as usual; perceiving no light, he struck a match, and then there was both light and noise. The explosion that occurred shook things up quite badly, and Howard sustained severe bodily injuries.

A New Proposition Submitted by the St. Louis (Mo.) Gas, Fuel, and Power Company.—At the session of the St. Louis (Mo.) Council, held Friday, November 30, Mr. Rowse introduced a substitute for the St. Louis Gas, Fuel, and Power Company's bill, which has been under consideration by the Committee on Public Improvements. The new proposition is supposed to represent the conclusions of the Committee reached after protracted consultation with the attorneys of the Gas, Fuel, and Power Company. Under the new application the company seeks to be permitted to lay pipes in the streets north of Washington avenue at once, and after 1890 (when the exclusive charter of the old St. Louis Gas Company expires by limitation), that it shall be allowed to extend its mains throughout the entire city. The company binds itself to lay 100 miles of pipe by 1891, and agrees to lay ten miles per annum thereafter. It further agrees, after 1890, to enter into a contract with the city to light the streets at an annual charge of $20 per lamp-post. It is stipulated that the maximum price for gas shall be $1.60 per thousand feet, with a rebate of 10 per cent. for payment within five days. The franchise shall run until 1910, and is not transferable. The company agrees to pay 2½ per cent. annually to the city on gross earnings, and offers to deposit $100,000 in bonds with the city treasurer to guarantee the faithful performance of the promises made. It is also conceded that the city shall reserve the right to permit other gas companies to use the streets.

Mr. Stone also presented a resolution contemplating the letting of the contract to light the streets of the city with gas or electricity, after the year 1890, to the lowest bidder, in conformity with plans and specifications to be prepared by the Board of Public Improvements. The St. Louis Councilmen evidently believe in fixing these matters up a long way in advance. It would appear that the next thing in order ought to be a consideration of the value likely to be placed upon all these nice promises and pledges by the Councilmen of 1890. Is it not just possible that they might be regarded as only valuable as souvenirs of an ancient regime?

The Proposed Sale of the Philadelphia (Pa.) Gas Works.—At the special meeting of the Philadelphia (Pa.) Common Council, held to consider the advisability of passing an ordinance authorizing the sale of the city's gas works to private individuals, and briefly noticed in the last issue of the Journal, the following arguments for and against the proposed action were had. It might be well to here repeat a synopsis of the terms upon which the transfer was to be made. The principal tenets were that the works should be sold to the highest solvent bidders; that no bid of less than $10,000,000 be noticed; that $2,000,000 be paid at the time of purchase, and $500,000 each succeeding year until the whole purchase money be paid; that all unpaid money bear interest at the rate of 5 per cent. per annum; that the public lamps be supplied with gas at $25 per annum; and that no more than $1.50 per 1,000 cubic feet be charged to private consumers.

Councilman Bardsley appeared to be the most earnest advocate of the passage of the measure, claiming that after having given two years' study to the subject he had concluded that it was to the best interests of the city to sell the works. He stated that the proposed reduction in the price of gas would net a saving every year to consumers of $640,000; if the Council would limit the purchase price to $12,000,000, there would accrue, at 5 per cent. interest, an income of $600,000. The assessable real estate under control of the Gas Trust was set down at a valuation of $2,000,000, and this was now exempt from taxation; in the hands of a private corporation this would yield to the city treasury the sum of $37,500 in annual taxes. Mr. Bardsley assumed that the net profit of the Trust, in 1882, was $500,000, and claimed that there were many improvements imperatively needed at the works, and such could only be effected at an outlay of $2,500,000—new holders, mains, and meters being among the items. Over 100,000 new meters were required, and the same number of service pipes should be relaid. Many of the latter had been underground since 1836, were oxidized, and really worthless; the consequence being that the leakage account was fully 33 per cent. greater than it should be. Neither the city nor the Trust could lawfully make these expenditures—the city being powerless in the premises by reason of a constitutional amendment prohibiting it from guaranteeing the payment of any loan, and the Trust was forbidden by law from incurring a debt which had for its object the making of any permanent improvements. Mr. Bardsley thought it was astonishing that, in a great city like Philadelphia, possessing between 600 and 700 miles of gas mains, there should only be 1,300 feet of 40-inch, 7,000 feet of 30-inch, 1,625,000 feet of 3-inch, and 270,000 feet of 2-inch pipe, and argued that, because the Trust could not make the needed improvements, it was not right for the Councils to stand in the way of the people saving $640,000.

Councilman Maloney then argued against the sale proposition, asserting that the Council did not know the real value of the plant, and claimed that only those who wished to buy possessed the knowledge. He also presented an array of figures in support of his position. He maintained that the profit of the Trust, during the past year, was in reality $1,000,000, and not $500,000, as Mr. Bardsley had said, because the Trust had paid $500,000 toward the liquidation of certain loans, which, in justice, ought to be included in the profit account. Mr. Maloney continued: "If the works are sold, we lose, in addition, $325,000 for the lighting of street lamps; but from this total must be deducted $500,000 of interest and $114,000 now paid for street lamps, which leaves $711,000 of a loss the city would undoubtedly sustain every year. This year the Trust spent $300,000 in laying mains, and $150,000 in general improvements, and I am reliably informed it will close the year with a surplus of from $200,000 to $300,000, which, if added to the $711,000, would raise the entire annual loss, under the new proposition, to nearly $1,300,000. The gentlemen who drew up the ordinance appeared to think that Councilmen could not calculate. It is a very pertinent question, and has been asked many times, but I would like to know who are the people who want to buy these works? There is no doubt, however, that they know much better than do we the value of the plant and franchises which they seek to purchase."

Councilman Clay called attention to the decision of the Supreme Court that the Trust must be continued until Loan No. 9 has been paid off; and, consequently, a clear title could not be given to purchasers.

Councilman Vanderslice thought that the rapid progress of the electric

light indicated [poor man!] that within the next few years gas would be superseded by electricity, and expressed it as his opinion [poor, deluded man!] that the longer the sale of the works was postponed, so much the greater would they accordingly depreciate in value.

Councilman Rowan insisted that the gas works had always proved a costly toy for the city, and the sooner the city got rid of them the better.

Councilmen Walter and Henry spoke against the measure, and, on motion of Mr. Clay, the further consideration of the ordinance was indefinitely postponed by a vote of 62 to 21.

Mr. Vanderslice's reason that the measure should be enacted is certainly a bright one. He is confronted with an offer from capitalists who propose to invest the trifle of ten or twelve millions of dollars in the purchase of a gas works, and Mr. V. thinks they ought to be let have possession, as electricity is threatening so rapidly to destroy the gas industry. Do you really think so, Mr. Vanderslice? The possessors of the "twelve millions" do not appear to have let this "grave danger" deter them in the least. Oh! Mr. Vanderslice!

Gas Works for Huntington, West Va.—Mr. R. J. Simpson and others have organized a company for the purpose of constructing and operating a gas works at Huntington, West Va. The work of building has not yet been commenced.

Cheap Gas at Jacksonville, Ill.—Mr. E. J. King, Secretary of the Jacksonville (Ill.) Gas Light Company, has issued a circular to the people of his locality, calling upon them for support in the matter of an increased use of gas, in order that the company may be recouped for the considerable reduction made by it in the selling price. Mr. King thinks, and with every show of reason, that gas at $2 per thousand in Jacksonville, a city of "distances," with only 17 miles of main, and consumers widely scattered, is in fact lower than in many cities with ten times the population and one hundred times the consumption.

Mr. King's circular reads as follows:

"The question now is, will all who are on our lines do what they can to sustain us in this effort to put gas within the reach of everyone? The stock of this company is owned by our citizens, and we do not wish to find at the end of a year's trial that their faith in the management has been misplaced. To pay expenses and a reasonable dividend, with gas at $2 a thousand, will require a large increase of consumption. The amount of consumption, in proportion to length of main, should be increased ten to one.

"Taking into consideration the safety, convenience, and cleanliness of gas as compared with oil (its only formidable competitor), all can afford to use it at the present price. If you choose to call gas a luxury, is it not the cheapest luxury you can obtain? That consumers may be increased, we will fit houses, and furnish fixtures and stoves at net cost to us. We will run services and set meters without charge, and, in fact, do all in our power to make the expense as light as possible for those who are not prepared for its use.

"While we do not claim that gas for heating is economical, we do claim that, if properly used, at $2 per thousand feet it is the most economical fuel in the market for all kinds of cooking, and its employment especially convenient and pleasant during the summer months. That all may demonstrate this for themselves, we will set gas cooking stoves, free of all expense, for one month's trial.

"In conclusion, may we ask our patrons to assist us in our efforts to furnish a pure gas at the lowest possible price? They can aid us very much. We have spent a large amount of money in improvements during the past season in anticipation of this change, and we hope that we shall not be disappointed in our expectations."

It will be recollected that at the time Mr. King read his paper before the May meeting of the Western Gas Association, on the "Gas Stove" (see Journal of June 16, 1883), he stated, in the discussion which ensued, that two prices were charged by his company for gas supplied—the rates being $3 per thousand for illuminating, and $2.25 for gas stove purposes. Mr. King's initial trial, given in the paper alluded to, with only 45 stoves in use, figured up a profit of $525.17 on an investment of $1,404.20—or about 40 per cent.; and his subsequent experiences evidently prove to have been more successful still. At least the action just taken, in making an all-round figure of $2 per thousand, would appear to bear testimony to the truth of such a conclusion. The policy of making no reduction or concession to the users of gas for cooking and heating purposes is advocated by many, on the ground that consumers will say, if gas can be supplied at a reduced price for culinary operations, it can be as readily furnished at the same figures for lighting; and such a deduction seems logical.

We hope that Mr. King will present the results of his experience in this matter at the next meeting of the Western Association.

Will Norwalk, Ohio, Have a New Gas Works?—The Norwalk *Chronicle* says that Mr. F. B. Case, of that place, thinks Norwalk ought to have another gas works. He is said to be willing to invest $5,000 or $10,000 in such an understaking, with the understanding that the capital of the proposed corporation shall be $50,000. The *Chronicle* man thinks, "Mr. Case's proposition should be accepted, and new gas works be built with the opening of spring. Those who seem to know what they are talking about say that the investment will pay a clear profit of 10 per cent. per annum, over and above all expenses of repairs, taxes, insurance, etc. No more needed improvement can be given this city, nor one that will be more highly appreciated." We understand that "water gas," of some description or another, is being made at Norwalk, and from the foregoing, it looks like as though all the "Norwalkites" were not perfectly satisfied with the condition of things as existing there at the present time.

An Extraordinary Consolidation.—News of a rather queer consolidation of hitherto conflicting interests comes to us from Evansville, Ind. It appears that negotiations have been concluded, whereby the Evansville (Ind.) Gas Light Company and the Evansville Electric Light Company have agreed to join forces and consolidate under the title of the Evansville Gas and Electric Light Company. Probably one of the reasons for such action was the fact that the electric light company had secured a five year contract from the Council for lighting the streets of the city, and it is just possible that, even at the prices they were getting, could not make any profit out of the transaction; hence, when it was found that the gas company, like Barkis, was "willin' to listen to proposals" to merge the two interests (the gas and electric) into one, it was not long ere the "deal" was made, the exact terms of which have not reached us. The following articles of incorporation were filed on Friday, November 30.

The subscribers hereto certify that they have formed a company, and do hereby form a company for the purposes hereinafter stated under the provisions of an act entitled "An act for the incorporation of manufacturing and mining companies, and companies for mechanical and chemical and building purposes, approved May 20, 1852, and the act amendatory thereof." The corporate name adopted by such company is the Evansville Gas & Electric Light Company. The object of the formation of such a company is the manufacture of gas for lighting and other purposes, and the manufacture and production of an electric light and the manufacture and generation of electricity for lighting and for motive power and other purposes. The amount of capital stock of such company shall be $600,000, to be divided into 12,000 shares of $50 each. The duration of such company shall be 50 years.

There shall be six directors, who shall manage the affairs of such company during the first year, the said six directors to be the following named men, viz.: William Heilman, Samuel Bayard, Francis J. Reitz, Robert K. Dunkerson, Thomas E. Garvin and Jacob Eichel. The place where the operations of such company are to be carried on is the city of Evansville, in the county of Vanderburgh.

It will be interesting to note in this connection, the probable effect that the union will exert upon the lighting of Evansville's streets.

Paying Penalty for Her Curiosity.—Maggie Moran, a domestic in the family of J. B. Barnes, residing at No. 233 West Boardman street, Youngstown, Ohio, narrowly escaped death from suffocation through inhaling illuminating gas on the night of December 4. She was supplied with a lamp to light her to bed, and was cautioned not to meddle with the gas-jet in the room. About six o'clock the following morning she was heard moaning as if in great pain, and when her door was burst open the room was found to be filled with gas and the jet turned on nearly full; it is supposed that the injunction to refrain from meddling with the gas-jet aroused her curiosity and she turned on the gas and forgot to turn it off. Her curiosity was satisfied, but it nearly cost her her life. When found, she was nearly dead, and Mr. Barnes' family did what they could to resuscitate her, and sent for Drs. Matthews and Slosson, who succeeded in bringing her back to consciousness. This was coal gas.

What They Think of Him.—The Hartford *Sunday Journal*, of December 2, contains the following:

"For a period of 28 years Alderman John P. Harbison has been associated with the Hartford City Gas Light Company, and is at present its treasurer. Last Friday was the 28th anniversary of his connection with the company. Mr. Harbison has been a faithful employé and a zealous and intelligent officer, and he has been identified, more than any other man, with the prosperity of the company. It is a happy opening of the 29th year, both for Mr. Harbison and the public, to announce a reduction of gas to $1.80 per 1,000 cubic feet. Good luck to Mr. Harbison and to the new price schedule, too."

Improvements at the Chicago (Ill.) Gas Works.—Under the vigorous management of Mr. Theobald Forstall, ably supported by Mr. P. T. Burtis, important improvements and extensions have been made by the Chicago Gas Light Company during the present year, both at the works and in the streets. A three-million "Standard" washer-scrubber has been ordered, and is now being constructed by the Smith & Sayre Manufacturing Company, of New York city. This is the largest "Standard," up to the present writing, ordered in this country.

The Dangerous Electric Wires.

During the progress of the suit of John S. Tuttle against the Brush Electric Illuminating Company, for the removal of the electric light poles and wires in Twenty-fifth street, between Broadway and Sixth avenue, New York city, before Judge Ingraham, in the special term of the Superior Court, some rather convincing evidence as to the danger of wires conducting the electric current was presented by an accident which occurred on the evening of Monday, November 26. A hack driven by Thomas Seabrook, who was attempting to manage a vicious horse without the aid of a curb, ran into one of the Brush Company's poles in Fifth avenue, between Thirty-third and Thirty-fourth streets, felling it to the ground; the electric wires were severed, the street was left in darkness, and a decidedly dangerous and mixed condition of things ensued.

The *Evening Post*, in speaking of the affair, said: "After the experience in Fifth avenue there is no necessity for further expert testimony concerning the danger from electric lighting wires. A runaway on the avenue broke down one of the Brush poles, and trailed the wire upon the pavement. A passing horse stepped upon the wire; there was a flash of purple light, a report like a pistol shot, all the lights on the avenue went out, and the horse fell, apparently dead. A moment later a second horse stepped upon the wire, and dropped down like the first. The avenue was immediately closed to travelers of all kinds. Of course, if a person had stepped upon the wire he would have shared the fate of the horses. It was a stormy night, and there were few people upon the avenue, or the consequences might have been much more serious. Clearly, the only safe place for these wires is underground, and the sooner they are put there the better."

The Committee on Finance, of our great and only Board of Aldermen, have suddenly become alive to the gravity of the situation, judging from the fact that they lately presented to their august confreres a long report with reference to the erection of poles in the city to support telegraph, telephone, electric light, and other wires. The committee claim to have examined the question so far as it relates to the erection and use of poles for electric light wires, stating that several electric lighting companies have erected such poles, and that the committee are of the opinion that prompt action is necessary by the Common Council to relieve the citizens from an evil which is "daily increasing, and that has already attained a growth which is alarming. The loss of property by fire caused by contact of electric conductors can be made good; but when lives are endangered it is the imperative duty of the Council to interpose between the citizens and the electric illuminating companies, and compel a compliance with the terms of their grants from the corporate authorities, by requiring them to remove the poles and wires from the highways, and lay their tubes, wires, and conductors beneath the surface of the streets." The committee submitted an ordinance requiring every electric illuminating company, within six months from the passage of the act, to lay its wires underground, and providing for the removal of all surface poles now in use. Refusal or neglect to comply with the requirements of the ordinance subjects the offending companies to a heavy fine, which may be imposed by any police magistrate, one-half to go to the informer or complainant. The report and ordinance were laid over for one week under the rules.

If our city fathers had been less lavish in the past in the matter of bestowing valuable franchises right and left, without giving a moment's reflection to the after consequences, they would not now find it necessary to give such painful, not to say tearful, efforts to a consideration of "the imperative duty of the Council to interpose between the citizens and the electric illuminating companies.

Middlesborough Gas Exhibition.

The Middlesborough (Eng.) gas apparatus exhibition was signally successful. During the fourteen days of the display thousands of visitors attended, and its value as an educator may be judged when it is stated that orders for about 200 gas cookers and gas fires had been received. Messrs. J. Wright & Co., of Birmingham, were awarded the first prize for their "Eureka" gas cooking stove; the gas heating stove of Mr. Thos. Fletcher, of Warrington, being the successful competitor in that class. Messrs. W. Sugg & Co. carried away the first prize for best specimens of domestic gas burners.

The Market for Gas Securities.

The most striking feature of the city gas share market during the past fortnight is the high figure at which Manhattan gas is quoted. The stock is now quoted ex-dividend of 5 per cent. made payable December 15, at 245 to 250. This time a year ago Manhattan was quoted at 212 to 218. Metropolitan gas is also considerably stronger, at 195 bid, 200 asked; the corresponding quotation for 1882 shows the figures of 178 to 182. New York gas also rules decidedly stronger and higher, as the quotation of 140 to 145 readily shows; figures for 1882 were 110 to 115. Mutual gas also participates in the upward movement, being recorded at 123 to 126—just 20 "points" higher than the asked and selling prices of December 16, 1882. We note a sale at auction, on December 5, of this last named security, 20 shares being disposed of at 122½, and, on Dec. 12, 10 shares at 124½. Municipal gas is a shade weaker, at 188 to 190—the quotation for 1882 reads, 165 to 170. Harlem gas is steady at 113 to 115, the 1882 prices being 90 to 95. Equitable gas is sluggish at 90 to 93. Northern gas is at same as last quotation. There is no disposition shown on the part of holders of the highest-priced shares to sell, an advance of 3 points failing to elicit an offer. In city electric shares we note that the Brush company's stock is offered at 94; Edison Electric Illuminating shares are offered at 65, with no definite figure bid. It could probably be obtained at a considerable concession from the asking price. It must make the majority of electric light investors, we mean those on the outside, who were bamboozled into placing their money in the various electric lighting concerns with the expectation that gas was to be "wiped out in a year," as was so brazenly asserted in various quarters, somewhat ruffled as to their "financial feelings," when examining a table expressing the ruling values of the shares in the business which is not "wiped out," and does not appear even now to be at all ready for the application of the "dampened sponge."

Brooklyn gas securities, with the possible exception of the Nassau company, which still maintains its aggressive attitude towards the "grabbers," have weakened somewhat from previous quotations. The "spurt" occasioned by the announcement that the war was settled caused what was really an abnormal advance, and prices are now gradually being restored to a proper basis. Looking the whole situation over calmly and without bias, it is hard to see where any of the companies have been really benefited by the agreement reached. Of course, this statement does not hold good with relation to the Fulton Municipal Company, as this concern would seem to have gotten the greater portion of the milk extracted from the cocoanut. The increase in value of Metropolitan stock might possibly be fairly attributed to the rapid growth of its district, which is being built up with a class of residences, the purchasers of which are of the kind going to make good gas consumers. The future of this company would seem to be likely quite prosperous. We quote Brooklyn gas at 120 to 127; Citizens, at 88 to 90; Fulton Municipal, 112 to 114; Peoples, 70 to 75; Metropolitan, 90 to 92; Nassau, 75 to 80; Williamsburgh, 107 to 112.

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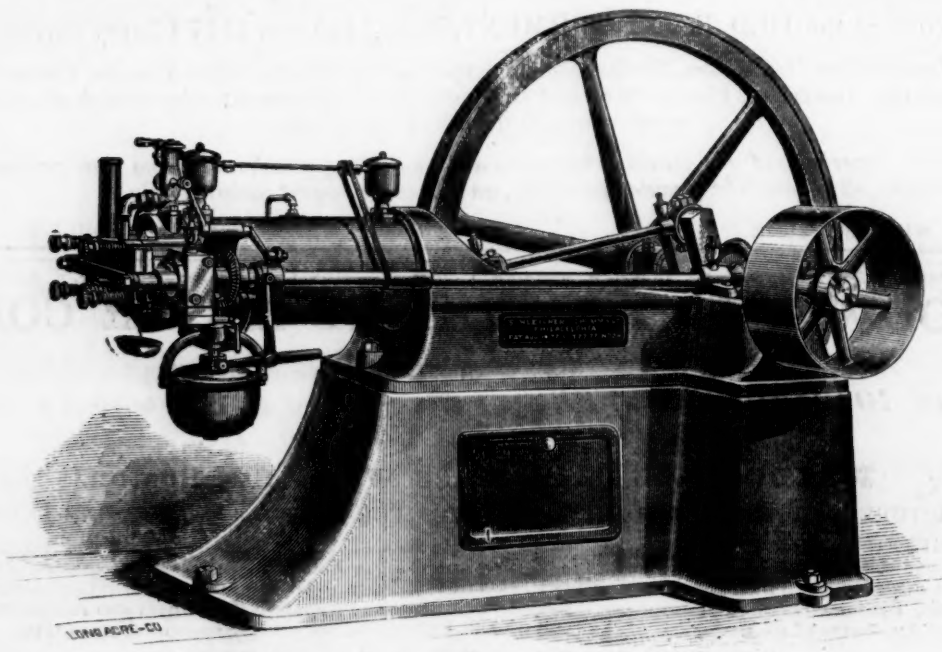

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